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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,162	07/09/2003	Jianying Li	131214	9757

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EXAMINER

CHU, RANDOLPH I

ART UNIT PAPER NUMBER

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/616,162

Applicant(s)

LI, JIANYING

Examiner

Randolph Chu

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-18 and 20-25 is/are rejected.
- 7) ☒ Claim(s) 9 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 7/9/2003 has been considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 4, 14 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Term "the region" in 4<sup>th</sup> line of claims 4, 14 and 24 are indefinite.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim (s) 1-4, 10-14 and 20-24 is/are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 4,317,179 to Kato et al.

With respect to claim 1, Kato et al. discloses, obtaining an image (abstract); and obtaining a final pixel value by performing a filtering operation on an initial pixel value of at least one pixel of the image and by modulating the filtering operation with a gain factor that is a function of the initial pixel value (abstract, col. 3 line 64- col. 4 line 2, col. lines 8-13).

With respect to claim 2, Kato et al. discloses, obtaining the final pixel value comprises obtaining the final pixel value by using  $P_f(i,j) = P(i,j) - (P(i,j) - \text{decon}(P(i,j))) * \text{Gain}(i,j)$ , wherein  $P(i,j)$  ( $D_{\text{org}}$ ) the initial pixel value,  $\text{decon}(P(i,j))$  ( $D_{\text{us}}$ ) is a deconvolution operation performed on the initial pixel value,  $\text{Gain}(i,j)$  ( $\beta$ ) is the gain factor of the pixel, and  $(i,j)$  is the pixel (abstract, col. 3 line 64- col. 4 line 2, col. lines 8-13).

With respect to claim 3, Kato et al. discloses, categorizing the image into at least two regions of low, medium, and high density (col. 11 lines 13-41).

With respect to claim 4, Kato et al. discloses modulating the filtering operation comprises: performing a smoothing operation on one of the regions; and limiting the smoothing operation to the region (col. 3 lines 40-63).

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With respect to claim 10, please refer to rejection for claim 1.

With respect to claim 11, please refer to rejection for claim 1.

With respect to claim 12, please refer to rejection for claim 2.

With respect to claim 13, please refer to rejection for claim 3.

With respect to claim 14, please refer to rejection for claim 4.

With respect to claim 20, please refer to rejection for claim 1.

With respect to claim 21, please refer to rejection for claim 1.

With respect to claim 22, please refer to rejection for claim 2.

With respect to claim 23, please refer to rejection for claim 3.

With respect to claim 24, please refer to rejection for claim 4.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 5, 6, 15, 16 and 25 are rejected under 35 USC 103(a) as being unpatentable over Kato et al. (US Patent 4,317,179) in view of Ahmed et al. (US Patent 7,079,686).

With respect to claim 5, Kato et al. discloses all the limitations of claim 4 as applied above from which claim 5 respectively depend.

Kato et al. does not disclose determining a threshold value T.

Ahmed et al. teaches determining a threshold value (Figure 6).

Kato et al. and Ahmed et al. are analogous art because they are in the "same field of endeavor", image processing.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to determine threshold in the method of Kato et al.

The suggestion/motivation for doing so would have been that threshold value is calculated so that it can be used in calculation of value for pixel of interest.

Therefore, it would have been obvious to combine Ahmed et al. with Kato et al. to obtain the invention as specified in claim 5.

With respect to claim 6, Kato et al. does not disclose generating a gain factor curve as a function of a relative pixel value of each pixel of the image.

But it is obvious that one skilled in the art is able to generate a gain factor curve using gain function (Kato et al. col. 3 lines 64-69).

With respect to claim 15, please refer to rejection for claim 5.

With respect to claim 16, please refer to rejection for claim 6.

With respect to claim 25, please refer to rejection for claim 5.

8. Claim 7, 8, 17 and 18 are rejected under 35 USC 103(a) as being unpatentable over Kato et al. (US Patent 4,317,179) in view of Ahmed et al. (US Patent 7,079,686) and in further view of Nakamura et al. (US Patent 5,649,031).

With respect to claim 7, Kato et al. in view of Ahmed et al. teaches all the limitations of claim 6 as applied above from which claim 7 respectively depend.

Kato et al. in view of Ahmed et al. does not disclose calculating an effective pixel value from the initial pixel value by using  $(P_e(i,j)=(P(i,j)+P(i-1,j)+P(i+1,j)+P(i,j-1)+P(i,j+1)))/5$ , wherein  $P_e(i,j)$  is the effective pixel value, and  $P(i-1, j)$ ,  $P(i+1, j)$ ,  $P(i, j-1)$ , and  $P(i, j+1)$  are pixel values of pixels that are adjoining the pixel with pixel value  $P(i, j)$ .

Nakamura et al. teaches calculating an effective pixel value from the initial pixel value by using  $(P_e(i,j)=(P(i,j)+P(i-1,j)+P(i+1,j)+P(i,j-1)+P(i,j+1))/5$ , wherein  $P_e(i,j)$  is the effective pixel value, and  $P(i-1, j)$ ,  $P(i+1, j)$ ,  $P(i, j-1)$ , and  $P(i, j+1)$  are pixel values of pixels that are adjoining the pixel with pixel value  $P(i, j)$ . (Fig. 3B, col. 3 line 64-col.4 line 19,  $A(h) = (c+g+h+l+m)/5$ ).

Kato et al. and Ahmed et al. are analogous art because they are in the "same field of endeavor", image processing.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use  $P_e(i,j)=(P(i,j)+P(i-1,j)+P(i+1,j)+P(i,j-1)+P(i,j+1))/5$  to determine effective pixel value in the method of Kato et al.

The suggestion/motivation for doing so would have been that even weighted average of neighbor pixel to blur the image.

Therefore, it would have been obvious to combine Nakamura et al. with Ahmed et al. and Kato et al. to obtain the invention as specified in claim 7.

With respect to claim 8, Ahmed et al. teaches calculating the relative pixel value  $P_r(i,j)$  from the effective pixel value by using  $P_r(i,j)=P_e(i,j)/T$  (col. 10 lines 13-28).

With respect to claim 17, please refer to rejection for claim 7.

With respect to claim 18, please refer to rejection for claim 8.

### ***Allowable Subject Matter***

9. Claims 9 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randolph Chu whose telephone number is 571-270-1145. The examiner can normally be reached on Monday to Thursday from 7:30 am - 5 pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on 571-272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RIC/



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SUPERVISORY PATENT EXAMINER